

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



April 7, 2004

Mr. Rick Tetzloff, Project Manager
Calpine
805 S.W. Broadway, Suite 1850
Portland, OR 97205

Dear Mr. Tetzloff:

LOS ESTEROS CRITICAL ENERGY FACILITY 2 (03-AFC-2) DATA REQUESTS

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission (Energy Commission) staff requests that Calpine supply the information specified in the enclosed data requests.

The subject areas addressed in the enclosed data requests 1 through 57 are air quality, biological resources, cultural resources, land use, public health, soil and water resources, transmission systems engineering, visual resources, visual resources-plume, and waste management. The information requested is necessary to understand the project, assess whether the project would result in significant environmental effects, and to assess project alternatives and mitigation measures.

Written responses to the enclosed data requests are due to the Energy Commission by May 7, 2004, or at a later date agreed upon by the Energy Commission staff and the applicant.

If you are unable to provide the information requested in the data requests or object to providing it, you must contact the committee assigned to the project and the project manager, within 10 days of receiving these requests, stating your reason for delay or objection.

If you have any questions regarding the enclosed data requests, please call me at (916) 651-8853.

Sincerely,

Robert Worl
Project Manager

Enclosure

cc: Steven De Young
Gregory L. Wheatland, Esq.
Agency Distribution List

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

Technical Area: Air Quality

Author: Gabriel D. Taylor

Note: Any following reference to the existing project or the currently enforceable set of Conditions of Certification will be abbreviated as "LECEF1". Any reference to the proposed Phase 1 relicensing will be abbreviated as "LECEF2 Phase 1" or simply "Phase 1" and to the combined cycle conversion as "LECEF2 Phase 2" or simply "Phase 2".

PHASE 1 DATA REQUESTS

BACKGROUND

Automatic Generation Control (AGC)

Some facilities (e.g. the Los Medanos District Energy Facility) operate under Automatic Generation Control (AGC), where the California Independent System Operator (ISO) has direct control over the output from the facility. This can lead to emissions in excess of permit limits if the ISO directs the facility to operate under certain conditions.

DATA REQUEST

1. Will the Phase 1 Los Esteros Critical Energy Facility have an AGC agreement with the ISO?
2. If such an agreement is planned, please provide an analysis of any impacts the AGC will have on the project's ability to comply with all proposed emissions limits.

BACKGROUND

Increased PM10 Emissions Limit

Section 8.1.2.2 of the AFC (Table 8.1-16) presents a proposed increase of the Phase 1 emissions limit for PM10 from 2.5 to 3.0 lb/hr per turbine, 240 to 288 lb/day for the facility and 43.8 to 52.6 tons/year for the facility. These changes are not supported by an analysis of the operational data or linked to a mitigation proposal.

In addition, staff has reviewed recent source test data from other, similar, GE LM6000 based, energy generation facilities and found that PM10 emissions in the 0.40 to 1.00 lb/hr range are common. No discussion of efforts to improve PM10 emissions compliance was provided in the AFC.

The fuel sulfur content relates directly to the stack PM10 emissions. Section 8.1.2 of the AFC proposes an increased fuel sulfur limit, and an increased averaging time period for that limit. It is not clear on what basis this request is made.

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

DATA REQUEST

3. Please provide emissions data and an analysis that substantiates the need for a 20% increased PM10 emissions limit for the facility.
4. Please provide a detailed record of efforts that have been made at the facility to control the PM10 emissions, in order to maintain compliance with the existing emissions limit.
5. If PM10 emissions limits were increased, then additional mitigation would likely be necessary. Please provide a plan for "scaling up" the existing PM10 Mitigation Plan, as defined in the existing LECEF1 condition AQ-SC4, to mitigate the proposed additional 9.3 tons/year of PM10, if deemed necessary. Please include documentation of communication with any involved local agencies (e.g. BAAQMD or local school districts), indicating their preliminary interest in participating in the expanded plan.
6. The current LECEF1 Condition of Certification AQ-24(c) specifies a limit of 0.25 gr S/100 scf and Condition of Certification AQ-25(e) specifies that fuel sulfur testing must be performed quarterly. Section 8.1.2 of the AFC (pg. 8.1-10) proposes not only increasing the limit to 0.33 gr S/100 scf, but also annually averaging the fuel sulfur tests to determine compliance. As is acknowledged in footnote #6 on pg. 8.1-10, a longer averaging period is considered less stringent. Please justify the need for the longer (i.e. less stringent) averaging time period in addition to the increased fuel sulfur content limit.

BACKGROUND

Source Test Data

The differences between the proposed Phase 1 PM10 and SO_x permit limits and the existing LECEF1 limits are based on source test results at the facility (AFC pg. 8.1-13). No source test results or specific reference to source test results were included in the AFC.

DATA REQUEST

7. Please provide an analysis of the all available source test results and continuous emissions monitoring data, with specific references, detailing how this data supports the proposed increased PM10 and SO_x emissions limits.

BACKGROUND

Proposed Calculations

In reviewing the AFC, staff has noted some inconsistencies in the data provided.

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

DATA REQUEST

8. Table 8.1-B1-2 in the LECEF2 AFC lists the Stack Diameter and Exhaust Velocity. Table 8.1B-2 in the original LECEF1 AFC is similar but lists different values for both Stack Diameter and Exhaust Velocity. The values used in the LECEF2 AFC appear to be "as built" values. Please clarify that the Stack Diameter and Exhaust Velocity used in Table 8.1-B1-2 of the LECEF2 AFC correctly reflect the existing facility and the facility as proposed in the Phase 1 relicensing.

BACKGROUND

Compliance with LORS

Condition of Certification AQ-38 states, "Within three years of CEC Approval, the owner/operator must convert to either a combined cycle or cogeneration plant using BACT in effect at the time of conversion. If conversion does not occur, the plant must cease operation." This condition is based directly on the BAAQMD condition number 38 in the current District permit.

DATA REQUEST

9. Please provide a discussion of how the Phase 1 "relicensing" effort will remain in compliance with both condition AQ-38 and the District's permit.

BACKGROUND

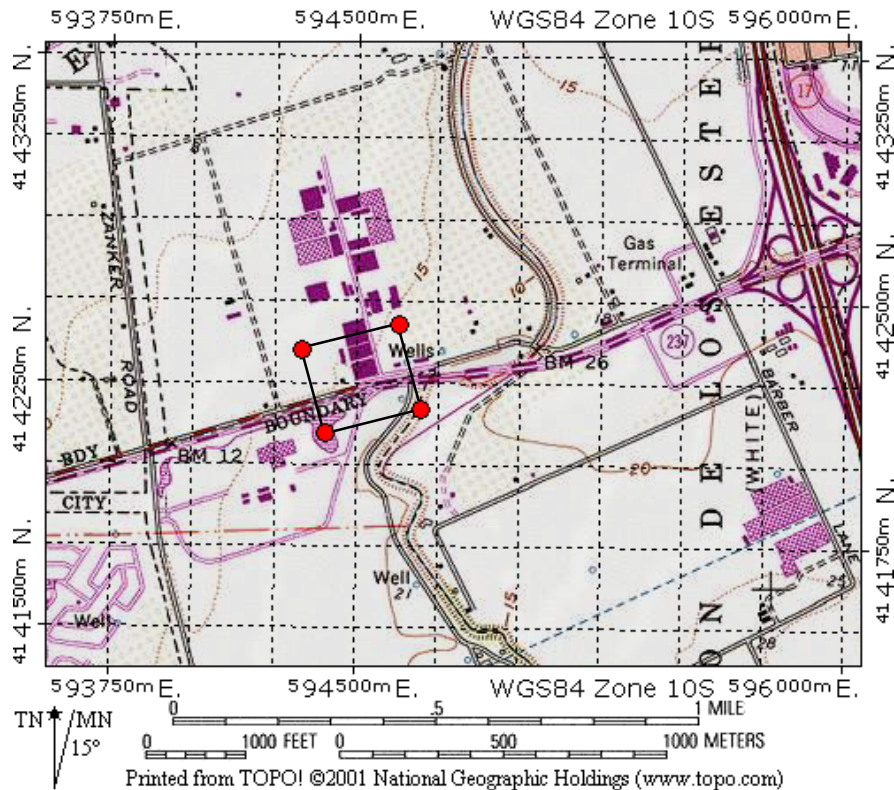
Preliminary Modeling Analysis

Staff has begun analyzing the provided Modeling data. During preliminary review staff found some inconsistencies in the data.

DATA REQUEST

10. Staff checked the listed "Fenceline Receptors" starting on line 379 of the modeling file "LE00_01B.dat". The four corners of the coordinate set are marked on the map below:

Los Esteros Critical Energy Facility II (03-AFC-2) Data Requests



The UTM coordinates used for the facility boundary appear to be displaced slightly to the south of the actual facility location. Preliminary investigation indicates that all coordinates used in the modeling (i.e. for both Phase 1 and Phase 2) were displaced in this manner. Please check the modeling receptor locations for accuracy and provide a discussion of this apparent error and if remodeling is necessary.

PHASE 2 DATA REQUESTS

BACKGROUND

Automatic Generation Control (AGC)

Some facilities (e.g. the Los Medanos District Energy Facility) operate under AGC, where the ISO has direct control over the output from the facility. This can lead to emissions in excess of permit limits if the ISO directs the facility to operate under certain conditions.

DATA REQUEST

11. Will the Phase 2 Los Esteros Critical Energy Facility have an AGC agreement with the ISO?

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

12. If such an agreement is planned, please provide an analysis of any impacts the AGC will have on the projects ability to comply with all emissions limits.

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

Technical Area: Biological Resources

Author: Natasha Nelson

BACKGROUND

Los Esteros Critical Energy Facility has already installed a Selective Catalytic Reduction (SCR) system, which reduces the oxides of nitrogen (NOx) emissions from the facility. Selective catalytic reduction refers to a process that chemically reduces NOx to elemental nitrogen and water vapor by injecting ammonia into the flue gas stream in the presence of a catalyst and excess oxygen. The process is termed selective because the ammonia preferentially reacts with NOx rather than oxygen. Not all of this ammonia mixes in the flue gases to reduce NOx however; a portion of the ammonia passes through the SCR and is emitted unaltered from the stacks. These ammonia emissions are known as ammonia "slip". The "slip" rate has been set at 10 parts per million (ppm) as a regulatory threshold that will not be surpassed. Although the slip rate has remained the same in both proceedings, staff found discrepancies between the annual ammonia emissions documented in the original AFC and Data Responses, and the current AFC. Staff is concerned about the impacts of NOx and ammonia emissions on surrounding serpentine soils and their associated endemic and federally-listed species. Thus, it is important to know how the annual emissions of nitrogen based compounds from the project have changed.

DATA REQUEST

13. Review Table BR-1 (attached) for accuracy and provide comments on any discrepancies or additional data your staff has on nitrogen amounts.
14. Table 8.1A1-5 of the LECEF Phase 2 AFC lists the "Total Annual Emissions, 4 turbines" of ammonia as 110.9 tpy. However, the original LECEF Phase 1 AFC, in Table 8.1-14 (pg. 8.1-26) reports the annual ammonia emissions as 332,705 lb/year (166.35 tpy). Provide a calculation with a written explanation that shows how LECEF ammonia emissions rates were calculated to be 166.4 tons per year during the previous proceeding. Then provide analysis of why this number is now 110.9 and why 166.4 is not valid for use in the current proceeding.
15. For the months that the power plant was operational, provide for each month the total hours of normal operation, the number of start-ups and shut downs, the average NOx emissions (pounds per day), and average ammonia slip rate (pounds per day) as gathered for use in each quarterly report to satisfy Condition of Certification AQ-22 from the LECEF Phase 1 Commission Decision (see also Condition of Certification AQ-34) . If any of this information is proprietary, then submit this information under confidential cover.

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

Table BR-1 - Preliminary Analysis of Empirical Nitrogen Deposition

Emission	Tons/year of pollutant	Tons/ year as Nitrogen	Source
NOx emissions			
2001 estimate – Phase 1	75.4 tons/year ^a	22.9 tons/year	Data Response 154; Data Response 5 – Reprint of AFC Table 8.1A-5
2003 estimate – Phase 1	75.4 tons/year ^b	22.9 tons/year	AFC Table 8.1A1-4
2003 estimate – Phase 2	99.2 tons/year	30.2 tons/year	AFC Table 8.1-39, Note [d]
NH3 emissions			
2001 estimate – Phase 1	166.4 tons/year ^c	137.0 tons/year	Data Response 154, AFC Table 8.1-A-6
2003 estimate – Phase 1	110.9 tons/year	91.3 tons/year	AFC Table 8.1A1-5
2003 estimate – Phase 2	118.0 tons/year	97.2 tons/year	AFC Table 8.1-A2-6
Total Nitrogen Emissions (as Nitrogen)			
	Tons/ year as N	% Change from Phase 1 as calculated in 2001	% Change from Phase 1 as calculated in 2003
2001 estimate – Phase 1	159.9	Not Applicable	28.66%
2003 estimate – Phase 1	114.2	- 28.66 %	Not Applicable
2003 estimate – Phase 2	127.4	- 20.33 %	11.61%

^a Calculations assumed emissions at start-up and shut down were 8.55 lb/hr

^b Calculations assumed up to 250 hours per year of start-up and shut down, with emissions at start-up and shut down at 40 lb/hr (250 hours *40 lb/hr * 2000 lbs/ton = 5 tons/year), but because the applicant is accepting a cap on emissions, the total annual emissions remains the same as the amount used in 2001 proceeding.

^c Calculations confirming this number are part of this set of Data Requests.

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

BACKGROUND

Los Esteros Phase 1 will operate four natural gas-fired combustion turbines for up to 8510 hours and an emergency fire pump for up to 100 hours of required testing per year. In addition, the facility will operate under start-up (higher emissions) conditions for up to 250 hours per year. Thus, the power plant could be operational for 8760 hours. Los Esteros Phase 2 will operate the same four turbines with heat recovery steam generators (HRSGs), duct burners, the same fire pump, and again with up to 250 hours of start-up annually. Emissions include oxides of sulfur (SO_x), oxides of nitrogen (NO_x), and particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀). Additionally, ammonia (NH₃) emissions will occur as a by-product of the Selective Catalytic Reduction (SCR) technology (already installed) used to limit NO_x emissions.

Phase 1 is already operational and this has allowed the source testing of the various components of the combustion system. The applicant found that start-up emissions were much higher than predicted in the original licensing application. Whereas, the original analysis assumed start up would occur quickly enough that the NO_x emissions would approach 8.55 lb/hour, source test showed start-up NO_x emissions can go up to 40 lb/hour. In addition, start-up times have increased from 2 hours per day to up to 4 hours per day and the exhaust velocity has decreased. At the same time, there has been an unexplained reduction in ammonia emission on an annual basis, although the permit limit has remained at 10 ppm. Both NO_x and ammonia emissions can result in nitrogen deposition, but ammonia on a molecular basis has a higher depositional weight than NO_x.

Staff is concerned about the impacts of NO_x and ammonia emissions on regional serpentine soils and their associated endemic and federally-listed species. Nutrient-poor serpentine soils support an array of plant species specifically adapted to the edaphic conditions. Nitrogen is the primary limiting nutrient for plant growth on these soils, and the lack of adequate growth conditions has prevented the invasion of non-native grass species. Nitrogen deposition, primarily from industrial and vehicle emissions, artificially fertilize the soils creating better conditions for the non-native species to persist and ultimately out-compete the native species. Some of the serpentine endemic plant species are federally-listed, and some, act as host plants to sensitive wildlife. Thus, potential nitrogen deposition impacts to serpentine communities is a concern of both the U.S. Fish and Wildlife Service and Energy Commission staff.

DATA REQUEST

16. Explain if the nitrogen deposition from Phase 1 will be equal to the modeling done during the previous license review even when taking into account the higher start-up emissions, the change in exhaust velocity, and the reduction in ammonia emissions.

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

17. If the nitrogen deposition modeling results for Phase 1 would not be the same, provide an analysis of the natural gas-fired combustion turbines in simple cycle configuration with the emissions of the fire pump using a U.S. Fish and Wildlife Service (USFWS)-approved model ¹. The analysis should specify the amount of nitrogen deposition in the units kg/ha/year and the amount of deposition expected at potentially affected serpentine soils (such as Coyote Ridge and Tulare Hill). Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map or more current map) of the direct deposition values (not weighted average). Identify on the maps the boundaries of the critical habitat for Bay checkerspot butterfly (Federal Register, April 30, 2001).
18. Provide current information on the level of nitrogen deposition (differentiate wet and dry deposition) in the project area and the source for this information (e.g., a complete copy of the paper or report cited).
19. Provide the complete calculation (e.g., the amounts used) for the statement that the Phase 2 results in only a 15% increase over Phase 1 conditions (page 8.2-22 of the AFC). Provide what the emission levels were used to make this estimate and the assumptions behind these emission levels (e.g., the number of hours, the ppm, etc.).
20. Explain if the nitrogen deposition from Phase 2 would be different than the amount modeled during the previous license review when taking into account the duct-firing, higher start-up emissions, the change in exhaust velocity, and the reduction in ammonia emissions.
21. If the nitrogen deposition modeling results for Phase 2 would be different than previous modeling, provide an analysis of the natural gas-fired combustion turbines in combined cycle configuration with the emissions of the fire pump using a USFWS-approved model ¹. The analysis should specify the amount of nitrogen deposition in the units kg/ha/year and the amount of deposition expected at potentially affected serpentine soils (such as Coyote Ridge and Tulare Hill). Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map or more current map) of the direct deposition values (not weighted average). Identify on the maps the boundaries of the critical habitat for Bay checkerspot butterfly (Federal Register, April 30, 2001).
22. Provide a table of cumulative projects that will be considered in the air quality analysis (see AFC's Appendix 8.1-F2). Using Data Response 154 from the original LECEF proceeding (01-AFC-12) as a guide, provide the amount of nitrogen emitted from each of the projects. Once all projects have been

¹ Nitrogen deposition analysis in the previous proceeding used the Industrial Source Complex Short Term Version 3 (ISCST3) model. The model assumed the same parameters as those done for Metcalf Energy Project Nitrogen Impact Analyses (available by request): 100% conversion of ammonia and oxides of nitrogen into depositional nitrogen, 80% dry deposition, and operation at highest number of hours. The Energy Commission is currently funding an analysis of the various air dispersion models. If Calpine will propose a different model be used in this proceeding, these results should be discussed with USFWS before choosing a final model.

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

identified and emissions calculated, prepare an analysis of how the nitrogen emitted from these projects compares to the simple cycle power plant and then to the combined cycle power plant.

23. Provide information on some of the other cumulative projects that are ammonia sources in the air basin that may be contributing to nitrogen deposition on critical habitat for Bay checkerspot butterfly. Provide a brief analysis of the largest sources and compare them to the operations of the simple cycle and then the combined cycle power plant. Analysis should include information on stack height for stationary sources, the application amount and spray height for agriculture sources, and distance to the critical habitat areas.

BACKGROUND

In response to Data Request 149 in the original LECEF proceeding (01-AFC-12), the applicant provided an *Impact Analysis for Los Esteros Critical Energy Facility NOx Emissions* (December 11, 2001). In the *Impact Analysis*, the applicant proposed several measures to avoid, minimize and mitigate the potential impacts to federally-listed species. The applicant stated in Section 5.1 of the *Impact Analysis* that one of the minimization measures was to “provide offsets by buying or removing NOx emissions at a ratio of 1.15 to 1” (page 18).

DATA REQUEST

24. Staff understands that precursor organic compound ERCs were purchased instead of nitrogen oxide ERCs for LECEF Phase 1 (see Commission Decision, page 119). Provide an explanation of how these credits minimize nitrogen deposition.
25. Describe when the Emission Reduction Credits for NOx will be purchased for Phase 2, what is their most likely location in relation to the power plant (e.g, direction and number of miles), and at what ratio they will be purchased. Describe if these credits are already part of an existing bank, or if a new source is being proposed. Differentiate NOx credits from precursor organic compound credits in your answer.
26. Provide the status of the retrofit of the Gilroy Energy Facility that was initially accepted as a potential source of Emission Reduction Credits for NOx in October 2001 by the Bay Area Air Quality Management District. Have these Credits been accepted by the Bay Area Air Quality Management District?

BACKGROUND

The Energy Commission sent a letter to the US Fish and Wildlife Service on March 26, 2004, regarding this proceeding. We are requesting the agency’s determination of “take” in that letter. We know from the proceeding on Silicon Valley Power’s Pico Power

**Los Esteros Critical Energy Facility II
(03-AFC-2)
Data Requests**

Project (02-AFC-03) that projects can qualify for the low-effect Habitat Conservation Plan when impacts are low and the project can show improved conditions for the federally-listed species.

DATA REQUEST

27. Should the USFWS determine that a “take” permit is required for LECEF Phase 1 re-licensing or Phase 2, submit a schedule to obtain a “take” permit.

BACKGROUND

The Commission Decision for LECEF (01-AFC-12) stated “To avoid a significant and unavoidable impact to burrowing owls due to construction and operations of LECEF, we have included the following mitigation plan in Condition BIO-11: 6.75 acres of land be preserved on the 55-acre parcel or on the Cilker property (USD property); or 20.25 acres be purchased [off-site]. If land cannot be secured on site or on adjacent parcels, then somewhere in Santa Clara County.” (page 201). In the applicant’s submittal to the Energy Commission Compliance Unit, dated September 18, 2003, the applicant proposed 4.84 acres on the adjacent city owned buffer lands, along the shoulder of the access road and to the south, would be managed to benefit the burrowing owl. While Energy Commission and CDFG staff are still reviewing this proposal, it is likely that burrowing owl mitigation land will be located directly adjacent to the laydown area and access road.

DATA REQUEST

28. Describe what impacts could occur if burrowing owls were present during the construction of the combined cycle elements of the project and describe what impacts could occur to the mitigation lands. Differentiate permanent and temporary impacts in your response.
29. If there are potential impacts, propose avoidance and minimization measures that will be used for burrowing owls (if present) and the mitigation lands for this species during the construction of the combined cycle elements of the project.

**Los Esteros Critical Energy Facility
(03-AFC-2)
Data Requests**

Technical Area: Cultural Resources

Author: Gary Reinoehl

BACKGROUND

The AFC indicates that after the certification of the Los Esteros Peaker that test excavations and monitoring of construction excavation were conducted in accordance with Conditions of Certification CUL-5 and CUL-7. Numerous artifacts were located during the monitoring and the applicant indicates that none of the cultural materials found were considered significant. The AFC did not provide references for the information that was provided. CUL-9 requires that a Cultural Resources Report be submitted to the Compliance Project Manager that details all of the cultural resources activities that were conducted for the project. This information is necessary for staff to complete the analysis.

DATA REQUEST

30. Please provide a copy of the report required under CUL-9 of the Conditions of Certification documenting all of the cultural resources activities that were conducted for the project (both at the project site and the project linears). Note: reports need to be in the format recommended by the California Office of Historic Preservation's 1990 guidelines - Archaeological Resource Management Reports (ARMR).
31. If any areas of the project or linears have not been surveyed within the last five years, please provide a current archeological survey report in the format recommended by the California Office of Historic Preservation's 1990 guidelines - Archaeological Resource Management Reports (ARMR).
32. For all discovered resources or newly identified resources, please provide a recommendation of the eligibility of the resource for the California Register of Historic Resources under CEQA Section 15064.5, (a), (3), (A),(B),(C) & (D) in the above report.

BACKGROUND

The applicant indicates that the County Ordinance No. B6-18 requires immediate notification of the Santa Clara County Coroner when human remains are located. If the human remains are determined to be Native American, the applicant is also to notify the Santa Clara County coordinator of Indian affairs and the Director of Planning, Building and Code Enforcement. Staff needs the following information for the analysis.

**Los Esteros Critical Energy Facility
(03-AFC-2)
Data Requests**

DATA REQUEST

33.
 - a If the City of San Jose's General Plan incorporates Santa Clara County Ordinance B6-18, please provide a copy of that portion of the City of San Jose's General Plan that incorporates the ordinance.
 - b In accordance with Santa Clara County Ordinance B6-18 through B6-23 please provide the name and phone numbers of the County Coroner, the County Engineer, and the county coordinator of Indian affairs.

**Los Esteros Critical Energy Facility
(03-AFC-2)
Data Requests**

**Technical Area: Land Use
Author: James Adams**

BACKGROUND

The Los Esteros Critical Energy Facility (LECEF) Phase 2 will require an amendment to the planned development zoning requirements for the City of San Jose. It is unclear when this process will begin, the steps and documentation to be used, and a timeline for the required action.

DATA REQUEST

34. Please provide a timeline for the rezoning process and identify the various steps involved.
35. Please identify any California Environmental Quality Act (CEQA) documentation related to the rezoning actions that will be required by the City of San Jose.

**Los Esteros Critical Energy Facility
(03-AFC-2)
Data Requests**

Technical Area: Public Health

Author: Ramesh Sundareswaran

BACKGROUND

Table 8.9-3 of the AFC lists various chemical substances that are potential emissions to the air from the proposed facility. Among the chemicals are various metals and polycyclic aromatic hydrocarbons (PAHs). In Appendix 8.1-C2 to the AFC, the metals arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver and zinc and the PAHs benzo (a) anthracene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dbenz (a, h) anthracene and indeno (1,23-cd) pyrene have been omitted in the modeling runs.

DATA REQUEST

36. Please explain why the chemicals identified above were omitted. If any were inadvertently omitted, provide a revised risk assessment and analysis that incorporates those chemicals.

**Los Esteros Critical Energy Facility
(03-AFC-2)
Data Requests**

Technical Area: Soils and Water Resources

Author: Lorraine White

BACKGROUND

The applicant proposes to discharge the LECEF waste water to the City of San Jose sewer system. Phase 1 currently discharges between 176,600 gpd and 297,000 gpd (AFC, p. 8.15-11). Addition of Phase 2 will more than double the project's waste water discharge (AFC, p. 8.15-13). Other projects have increased the efficiency of water use and reducing adverse impacts associated with waste water discharges by using a Zero Liquid Discharge (ZLD) system that eliminates waste water and produces a residual salt cake that can be disposed at a solid waste site. The 2003 Integrated Energy Policy Report (IEPR) contains a policy for power plants to use ZLD technologies unless such technologies are shown to be environmentally undesirable or economically unsound.

DATA REQUEST

37. Provide a complete discussion of a ZLD system that will be designed for the Phase 1 and Phase 2 facilities, or provide a complete analysis that shows that a ZLD system (no liquid wastewater discharge from the project, onsite or offsite) is either environmentally undesirable or economically unsound as defined in the Commission's 2003 IEPR. The analysis should include the impacts on water use and waste discharge, economic impacts (capital and operating costs), plant efficiency and output, solid waste disposal and environmental impacts

BACKGROUND

Figure 2.4-5a, Water Balance, Average Summer and Figure 2.4-5b, Water Balance, Average Annual of the AFC provide water use information on the combined operation of Phase 1 and Phase 2 of the LECEF. Table 8.15-2 provides estimated waste water concentrations for maximum discharge for Phase 1 only. On page 8.15-14, the applicant claims that although flows will increase, the waste water discharge quality for combined effluents from Phase 1 and Phase 2 will be similar to Phase 1 only. Staff notes that the relative contributions of the various waste streams to the water quality for the combined Phase 1 and Phase 2 facilities' effluent will change based on information contained in the water balance.

DATA REQUEST

38. Please provide all calculations, assumption and references used in determining average annual and peak water demands for Phase 1 and Phase 2.
39. Please provide all calculations, assumption and references used in estimating discharge water quality for Phase 1.

**Los Esteros Critical Energy Facility
(03-AFC-2)
Data Requests**

40. Please provide a table estimating the water quality of the various waste water streams and combined discharge to the City sewer system (similar to Table 8.15-2) for average and peak daily discharge from both Phase 1 and Phase 2.

BACKGROUND

Construction and operation of the Los Esteros Critical Energy Center (LECEF) Phase 2 may induce water and wind erosion at the power plant site and 13 acre lay down area. A drainage and erosion control plan is needed to address measures to protect water quality and soil resources. This plan will need to comply with the requirements of the City of San Jose's Grading and Excavation Permit. The purpose of the plan is to minimize the area disturbed, to protect disturbed and sensitive areas, to retain sediment on-site and to minimize off-site effects of water and wind erosion. In addition, storm water runoff may come in contact with contaminants during construction and operation of the project. A Storm Water Pollution Prevention Plan (SWPPP) had been produced and approved for Phase 1 construction of LECEF. In the same manner, a SWPPP will be necessary for Phase 2. An outfall for storm water discharge from Phase 1 to Coyote Creek will also be used for Phase 2.

DATA REQUEST

41. Please provide a draft Erosion Control Plan that identifies all proposed measures that will be implemented at various locations of the project during construction and operation of the proposed LECEF Phase 2. The plan must address the plant site, construction laydown area and all ancillary facilities.
- a. The draft Erosion Control Plan must identify all proposed permanent and temporary Best Management Practices (BMPs) in written form and depicted on a construction drawing(s) of appropriate scale to be employed to control water and wind related erosion and offsite sedimentation during construction and operation. Please provide specific "as-built" information regarding all Phase 1 features to be used for Phase 2, including the proposed permanent storm water outfall structure to be located in the low-flow channel of Coyote Creek.
 - b. Any measures necessary to address federal or regional permits (i.e., Nationwide Permits, Streambed Alteration Agreements, or 401 Certification) as required, should be identified.
 - c. The plan must also identify maintenance and monitoring efforts for all erosion control measures.
 - d. This plan must address all requirements of the City of San Jose's Grading and Excavation Permit and how the proposed project will comply with these requirements.

**Los Esteros Critical Energy Facility
(03-AFC-2)
Data Requests**

- e. Please provide representative profiles and cross sections of areas that will be excavated and filled, in relation to the proposed conceptual location of BMP's for erosion control during construction.
 - f. Please provide a discussion of all assumptions, calculations, measures, and any other data or information related to the design of drainage features to be used by Phase 2.
42. Please provide a draft Storm Water Pollution Prevention Plan (SWPPP) consistent with the requirements for a General Storm Water Construction Activity Permit for the proposed Phase 2.
- a. The draft SWPPP shall identify all permanent and temporary BMPs in written form and depict conceptual locations in order to prevent or avoid contamination of stormwater.
 - b. The draft plan should also address comments provided by the Regional Water Quality Control Board or other agencies as applicable.
 - c. Various contaminant sources will be present at the site. Various chemicals used during operation, chemical cleaning and washwater wastes (containing high concentrations of metals) and other contaminants will be stored onsite. Please show possible storage locations at the site and specify appropriate BMPs that will be used to prevent spills or leaks of contaminants and measures to be employed in the event of such an occurrence. Specifically address how stormwater that has come into contact with any contaminated materials will be collected, treated, and discharged.
 - d. Please discuss the design storm that was used or will be used to calculate additional capacity required in the contained areas surrounding outside chemical storage areas.
 - e. During construction, it is possible that groundwater will be encountered. Please discuss dewatering activities/techniques that may be needed, including disposal of associated water.
 - f. Please address how any contaminated soil or groundwater that may be excavated or encountered during construction will be collected, treated, and discharged.
 - g. If hydrostatic testing will be done, please discuss the anticipated water quality of wastewater discharged, anticipated disposal of this waste stream and any appropriate BMPs to ensure no discharge of contaminants to surface or groundwater will result from hydrostatic testing.

**Los Esteros Critical Energy Facility 2
(03-AFC-2)
Data Requests**

Technical Area: Traffic and Transportation

Author: Amanda Stennick

BACKGROUND

Section 8.12.3.3 discusses hazardous material delivery, and states that delivery routes will occur on prearranged routes and will comply with all laws, ordinances, regulations, and standards. No specific route is discussed.

DATA REQUEST

43. Please provide a proposed hazardous material delivery route and describe the land uses within 500 feet on both sides of the street/road.

BACKGROUND

Section 8.10.2.3 considers impacts that occur to the roadway network during the construction phase. This section does not present information that suggests that any collision analysis was done for the study intersections.

DATA REQUEST

44. Please provide collision analysis data for the intersections listed in Section 8.10.2.3.

BACKGROUND

Section 8.12.1.4 discusses existing traffic volumes within the study area. In order for staff to better establish the existing traffic conditions and better determine the traffic impacts of the project on local roadways, please provide the following.

DATA REQUEST

45. a. Please provide a current table similar to Table 8.10-1 in the 2001 LECEF AFC which shows intersection, peak hour, count date, average delay (seconds per vehicle), and LOS.
- b. Please provide a current table similar Table 8.10-2 in the 2001 LECEF AFC which shows for both mixed flow lanes and High Occupancy Vehicle (HOV) lanes the freeway segment, direction, peak hour, average speed, number of lanes, volume, density, and Level of Service (LOS).
- c. Please indicate which study intersections fall under which jurisdictions (e.g. City of San Jose, Milpitas, Santa Clara County, Caltrans).

**Los Esteros Critical Energy Facility 2
(03-AFC-2)
Data Requests**

Technical Area: Transmission System Engineering

Author: Mark Hesters

BACKGROUND

Staff needs to completely identify facilities required for termination of the project and all “downstream” transmission facilities required by the interconnection of the project.

DATA REQUEST

46. Provide a System Impact Study completed by the interconnecting utility or PG&E for any interconnection for which you are seeking certification. The study or studies should at a minimum demonstrate conformance or non-conformance with NERC/WSCC, California Independent System Operator (Cal-ISO) and utility reliability and planning criteria with the following provisions:
- a. Identify major assumptions in the base cases including imports and exports to the system, major generation including hydro, load changes in the system and queue generation.
 - b. Analyze system for Power Flow for N-0, important N-1 and critical N-2 contingency conditions, and provide a list of pre and post project overload criteria violations.
 - c. Analyze system for Transient Stability and Post-transient voltage conditions under critical N-1 and N-2 contingencies, and provide related plots, switching data and a list of voltage criteria violations.
 - d. Provide a Short Circuit Study Report showing fault currents at important substation buses with and without the new generation and respective breaker interrupting ratings in a table side by side.
 - e. Identify the reliability and planning criteria utilized to determine the criteria violations.
 - f. Provide a list of contingencies evaluated for each study.
 - g. List mitigation measures considered and those selected for all criteria violations.
 - h. Provide power flow diagrams (MW, % loading & P. U. voltage) for base cases with and without the project. Power flow diagrams must also be provided for all N-0, N-1 and N-2 studies where overloads or voltage violations occur.
 - i. Provide electronic copies of *.sav and *.drw GE PSLF and EPCL contingency and comparison files (if available).

**Los Esteros Critical Energy Facility 2
(03-AFC-2)
Data Requests**

Technical Area: Visual Resources and Visual Plume

Author: Eric Knight and William Walters

BACKGROUND

The addition of the six-cell cooling tower for the combined-cycle phase will substantially increase the prominence of the LECEF as viewed from eastbound Highway 237 (KOP 1). The landscaping (particularly the oak trees located on the berm southwest of the LECEF) planted for Phase 1 may not be dense enough to sufficiently screen the larger cooling tower from view.

DATA REQUEST

47. Using AFC Figure 8.13-2b (KOP 1 – Simulation with Phase 2 Installed) as a base image, please provide visual simulations of Phase 2 of the project with the existing landscaping shown after 5 and 20 years of growth. Please provide 11" x 17" color photocopies (and electronic files) of the new images at "life-size scale" when viewed at a standard reading/viewing distance of 18 inches.
48. Please provide the growth rate assumptions used, and the source of the assumptions, for all of the tree species depicted in the visual simulations.

BACKGROUND

The visual simulations of Phase 2 depict a row of square shapes along the upper portion of the six-cell cooling tower. Staff seeks clarification as to what is being depicted: Is this architectural treatment to break up the mass of the tower or is this equipment associated with the proposed plume-abatement technology? Although the AFC (Table 8.13-5) states that the City of San Jose General Plan Policy 4 regarding the incorporation of "interesting and attractive design qualities" into any development adjacent to designated Landscaped Throughways (such as Highway 237) do not apply to LECEF because the project is not "adjacent" to the highway, this policy was found to be applicable to Phase 1 of the project by the Energy Commission (see Commission Decision pages 346-347) and was the basis for the inclusion of VIS-7. The Architectural Committee, which was established as a means of implementing VIS-7, did not recommend architectural treatment for Phase 1 as a means of improving the design quality of the power plant. However, the simple, block-like form of the cooling tower structure lends itself to architectural treatment better than the more complex power block structures and equipment. Until substantially screened by the landscaping (which was recommended by the Committee), the proposed six-cell cooling tower will be prominently visible from Highway 237 (KOP-1) and Zanker Road (KOP-2).

**Los Esteros Critical Energy Facility 2
(03-AFC-2)
Data Requests**

DATA REQUEST

49. Please discuss what is being depicted by the row of square shapes along the upper portion of the six-cell cooling tower.
50. Please discuss feasible design treatments that could be applied to the façade of the cooling tower that would reduce the visual monotony and apparent scale of the structure and improve its appearance, consistent with City of San Jose General Plan Policy 4. For example, Silicon Valley Power proposed alternating, horizontal bands of color on the façade of the Pico Power Project cooling tower to break up the mass of the tower. Any proposed color scheme should increase visual variety and reduce the size of areas of uninterrupted uniform color or texture, without creating distracting levels of contrast.
51. Please depict the design proposed by the applicant to comply with General Plan Policy 4 in the simulations requested above in Data Request 46 and in a revised simulation for KOP 2 (AFC Figure 8.13-3b).

BACKGROUND

Staff plans to perform a plume frequency calculation for the Phase 2 plume-abated cooling tower. Staff requires additional cooling tower operating information to complete this analysis.

DATA REQUEST

52. Please provide two fogging frequency curves for the plume abated cooling tower; the first for a 100% turbine load condition (all turbines firing), and the second for a 100% turbine load condition plus maximum duct firing (all turbines/duct burners firing).

BACKGROUND

Appendix 8.6-C of the AFC includes a copy of City of San Jose Ordinance No. 26343 approving the Planned Development Zoning for 174-acre parcel to be developed for the Dataport and LECEF projects with added conditions. The Land Use section of the AFC says that the development standards in the PD Zoning Ordinance are applicable to LECEF Phase 2 (AFC page 8.6-5). Condition 1c. of the PD Zoning Ordinance requires the "Use of best commercially feasible available technology for plume visibility reduction." This condition does not specifically mention the source (cooling tower vs. turbine/HRSG exhaust) of the plumes that need to be abated. The Visual Resources section of the AFC does not specify any turbine/HRSG plume abatement measures, does not identify Condition 1.c. of Ordinance No. 26343 as a LORS requirement, and does not demonstrate how the applicant plans to comply with this requirement. Staff requires additional information from the applicant in order to understand how the applicant plans to comply with the City of San Jose's plume visibility reduction

**Los Esteros Critical Energy Facility 2
(03-AFC-2)
Data Requests**

requirement for the turbine/HRSGs exhausts, and requires additional data in order to complete the turbine/HRSG visible plume modeling analysis.

DATA REQUEST

53. Please provide a description of the turbine/HRSG plume reduction technology that will be employed to comply with the City of San Jose's requirement to use best commercially feasible available technology for plume visibility reduction.
54. Please provide a table that presents any changes to the turbine/HRSG exhaust variables, as shown in AFC Appendix 8.1 Table 8.1-A2-1, that result from the implementation of the proposed turbine/HRSG exhaust plume visibility reduction technology.

**Los Esteros Critical Energy Facility Phase 2
(03-AFC-2)
Data Requests**

Technical Area: Waste Management

Author: Ramesh Sundareswaran

BACKGROUND

The Phase II Environmental Site Assessment (ESA) for the site was rather limited in scale and focussed only on certain areas of the site, instead of being comprehensive. Given the aforementioned, the AFC recognizes and concedes that the proposed site will likely have residual pesticides, metals, and other contaminants present in the subsurface throughout the site.

To address the above concern, LECEF LLC proposes to submit a Soils Management Plan (SMP) to CEC prior to start of any construction. The SMP will address how contaminated soil will be handled during earthmoving and also detail how the excavated soil will be stockpiled and tested for any offsite disposal.

DATA REQUEST

55. Please locate the following on an appropriately scaled figure of the site:
- a. Those onsite locations where earthmoving will be scheduled and where the SMP will potentially apply.
 - b. All the Phase II ESA soil and groundwater sampling locations.
 - c. All onsite locations that have been remediated.
56. Provide a tabulation of the Phase II ESA soil and groundwater sampling results including sampling location, contaminant types, sampling depths and contaminant concentrations. Sampling locations need to match with information provided in the figure requested above.
57. Describe the type of remediation that has been undertaken at the site, e.g., capping, dig and haul, etc and identify their locations on the figure requested above. Elaborate on any regulatory cleanup levels that were employed.